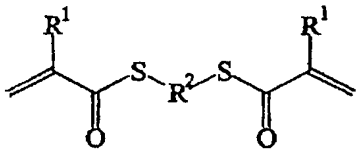
AMENDMENTS TO THE CLAIMS

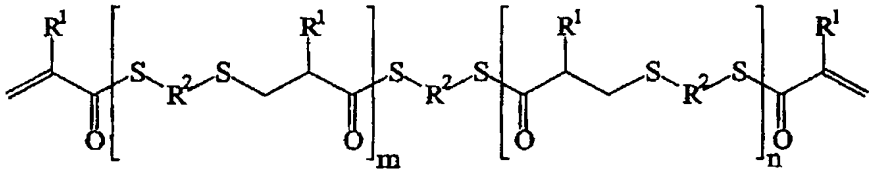
This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): A mixture for the production of transparent plastics, comprising:

a) a prepolymer, produced from compounds of the formula (I) and (II)



(I)



(II)

wherein R^1 each independently of one another mean hydrogen or a methyl residue,

R^2 each independently of one another mean a linear or branched, aliphatic or cycloaliphatic residue or a substituted or unsubstituted aromatic or heteroaromatic residue and m and n each independently of one another mean a whole number greater than 0 with $m + n > 0$, and alkylthiols or polythiols,

$HS\text{-}R^3\text{-}SH$ (III)

wherein R^3 can similarly or differently from R^2 have the meaning stated in R^2, and

b) at least one radical polymerizable monomer (A) with at least two methyl acrylate groups; and

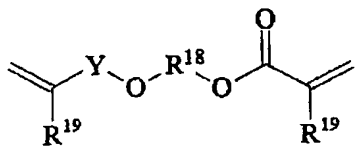
c) aromatic vinyl compounds,

d) optionally, a radical polymerizable monomer with at least two terminal olefinic groups, which differ in reactivity, ~~and/or~~

e) optionally, at least one ethylenically unsaturated monomer (B);

f) or optionally, a mixture of d) and e); and

g) an asymmetric crosslinker which is a radical polymerizable monomer with at least two terminal olefinic groups which differ in reactivity, of the general formula



(XII),

wherein

the residue R^{19} independently means a hydrogen atom, a fluorine atom and/or a methyl group,

the residue R^{18} is a linking group which contains 1 to 1000 carbon atoms, and the residue Y is a linkage or a linking group with 0 to 1000 carbon atoms and does not contain a carbonyl group directly connected to a carbon atom of the terminal olefinic group and directly connected to the oxygen adjacent to the residue Y in formula (XII).

Claim 2 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that it contains~~ which comprises more than 10 mol.% of compounds of the formula (II) with m + n = 2, based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 3 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ wherein the residue R^2 of the formulae (I) and/or (II) is an aliphatic residue with 1 to 10 carbon atoms.

Claim 4 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ which comprises ~~the mixture contains~~ more than 5.8 mol.% of compounds of the formula (II) with m + n = 3, based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 5 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ which comprises ~~the mixture contains~~ 1 to 50 mol.% of compounds of the formula (I), based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 6 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ which comprises ~~the mixture contains~~ 1 to 40 mol.% of compounds of the formula (II) with m + n = 1, based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 7 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ which comprises ~~the mixture contains~~ compounds of the formula (II) with m + n > 3.

Claim 8 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ wherein a ~~the~~ total content of compounds of the formula (I), (II) and (III) is at least 5.0 wt.%, based on the total weight of the mixture.

Claim 9 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ which comprises ~~the mixture contains~~ at least one monomer (A) which is copolymerizable with the prepolymers prepared from the monomers of the formulae (I), (II) and (III).

Claim 10 (Currently Amended): The mixture as claimed in claim 9, ~~characterized in that~~ which comprises ~~the mixture contains~~ di(meth)acrylates.

Claim 11 (Currently Amended): The mixture as claimed in claim 1, ~~characterized in that~~ which comprises ~~the mixture preferably contains~~ styrene as aromatic vinyl compounds.

Claim 12 (Canceled):

Claim 13 (Currently Amended): The ~~mixtures~~ mixture as claimed in claim 1 ~~12~~, ~~characterized in that~~ which comprises ~~they contain~~ allylpolyethylene glycol methacrylate.

Claim 14 (Currently Amended): The ~~mixtures~~ mixture as claimed in claim 1, ~~characterized in that~~ which comprises ~~they contain~~ at least one ethylenically unsaturated monomer (B).

Claim 15 (Currently Amended): The ~~mixtures~~ mixture as claimed in claim 14, ~~characterized in that~~ which comprises ~~they contain~~ 2-hydroxyethyl methacrylate.

Claim 16 (Currently Amended): A process for the production of transparent plastics, ~~characterized in that~~ comprising polymerizing a mixture as claimed in claim 1 ~~is polymerized~~.

Claim 17 (Currently Amended): A transparent plastic ~~obtainable~~ obtained by a process as claimed in claim 16.

Claim 18 (Currently Amended): The plastic as claimed in claim 17, ~~characterized in that~~ wherein a ~~the~~ refractive index of the plastic according to DIN 53491 is greater than 1.59.

Claim 19 (Currently Amended): The plastic as claimed in claim 17, ~~characterized in that~~ wherein an ~~the~~ Abbé number of the plastic according to DIN 53491 is greater than 36.

Claim 20 (Currently Amended): The plastic as claimed in claim 17, ~~characterized in that~~ wherein a ~~the~~ mean value of the diameter of ~~the~~ a ball which does not damage a ~~the~~ test specimen in ~~the~~ a falling ball test is ≥ 18.

Claim 21 (Currently Amended): The plastic as claimed in claim 17, ~~characterized in that~~ wherein a ~~the~~ transmission of the plastic according to DIN 5036 is ≥ 89%.

Claim 22 (Currently Amended): The plastic as claimed in claim 17, ~~characterized in that~~ having a ~~its~~ glass transition temperature ~~is~~ of greater than 80.0°C.

Claim 23 (Currently Amended): A mixture, containing:

(a) a mixture as claimed in claim 1; and

(b) at least one photochromic dye.

Claim 24 (Currently Amended): A photochromic material, comprising: ~~containing~~ a mixture as claimed in claim 23.

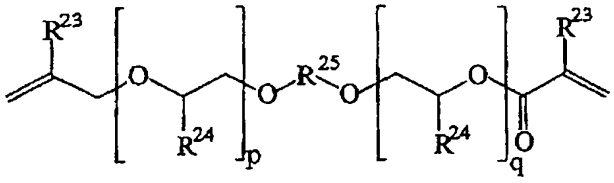
Claim 25 (Currently Amended): A method of using ~~the~~ a photochromic material, comprising:

incorporating said photochromic material as claimed in claim 24 ~~as~~ in a lens or a glass ~~panes~~ pane or a glass insert ~~inserts~~.

Claim 26 (Currently Amended): ~~The~~ A method of using a ~~the highly~~ transparent plastic, comprising: incorporating said transparent plastic as claimed in claim 17 in ~~as~~ an optical lens.

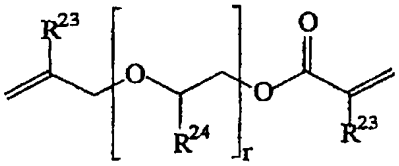
Claim 27 (Currently Amended): An optical lens, comprising: ~~containing~~ a transparent plastic as claimed in claim 17.

Claim 28 (New): The mixture as claimed in claim 1, wherein the compound of formula (XII) is a compound of formula (XIII)



(XIII)

or of the formula (XIV)



(XIV)

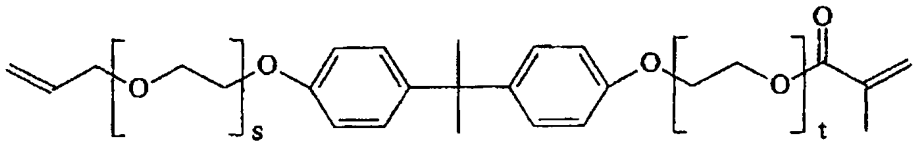
or mixture of formula (XIII) and formula (XIV);

wherein the residues R^{23} and R^{24} each independently of each other are a hydrogen or a methyl residue, and the residue R^{25} designates a linear or branched, aliphatic or cycloaliphatic divalent residue or a substituted or unsubstituted aromatic or heteroaromatic divalent residue.

Claim 29 (New): A lens, a glass pane or a glass insert, comprising:

the photochromic material as claimed in claim 24.

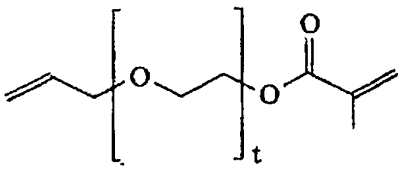
Claim 30 (New): The mixture as claimed in claim 28, wherein the compound of formula (XIV) is a compound of the formula (XIVa)



(XIVa)

wherein s and t are greater than or equal to zero and the sum s + t is in the range from 1 to 20.

Claim 31 (New): The mixture as claimed in claim 28, wherein the compound of formula (XIII) is a compound of the formula (XIVb)



(XIVb)

wherein s and t are greater than or equal to zero and the sum s + t is in the range from 1 to 20.